A BRITE COMPANY
A GOOD START BEGINS WITH AN A BRITE FINISH!

Technical Data Sheet

ALUMA ETCH™ 185

- ***Non-sludging formula.***
- ***Low, controlled foam blanket.***
- ***Dependable uniform finish.***
- ***Wide range of operating perimeters.***
- ***Can be utilized as a "no-dump" bath.***
- ***Finest etch process available.***
- ***Easy & economical to use.***

SATIN ETCH FOR ALUMINUM

ALUMA ETCH 185 *is* a blended powder material, that contains caustic, sequestrates, extenders and builders, that is specifically designed to provide safe, uniform, consistent etching of aluminum and aluminum alloys. It provides the finest etch technology available today.

ALUMA ETCH 185 produces varying depths of etch, from a light satin finish to deep stock removal, as in chemical milling. The extent of etch on the metal being processed is easily controlled by adjusting such factors such as temperature, time in solution and product concentration.

ALUMA ETCH 185 *is* designed to etch at elevated concentrations of dissolved aluminum without having to dump of decant the etch bath. During the etching process a slight foam layer will be produced which helps eliminates fumes and caustic spray so often experienced with plain caustic etch baths.

ALUMA ETCH 185 will not cause dry-on stains or run down patterns even on large sheets and long transfer times. It also prevents boundary attack, which may cause a spangled appearance. The surface produced is always uniform and fine-grained.

ALUMA ETCH 185 *is* a free-flowing, biodegradable product designed to produce little or no build-up on tank walls and heating coils. Thus, costly and time-consuming mechanical removal of these precipitates from tanks is eliminated.

OPERATING DATA

ALUMA ETCH 185	4-10 opg. (30-75 g/l)
Temperature	100-150° F. (38-66° C)
Time	15 sec.-3 min.

SOLUTION CONTROL

Solutions and Equipment Required

250 ml Erlenmeyer flask, Stirrer Plate, Medium Ashless Filter Paper, Phenolphthalein Indicator, 10 & 50 ml Burette, 1.0 N Sulfuric Acid, Black lined graph paper.

Analytical

1) Filter sample of solution through filter paper.
2) Pipette 10 ml of filtered etch into flask.
3) Add 50 ml DI water.
4) Titrate with l.0 N acid to permanent cloudy endpoint. (Use the graph paper under the flask and titrate until the lines are not distinguishable.) Record as "B".
5) To the same sample add 5 drops phenolphthalein.
7) Titrate with 1.0N acid to colorless end point that remains for thirty seconds or longer. Record as "A".

Calculation: Free Caustic: Titration "A" x 0.533 = opg free caustic. (x 7.5 = grams/liter).
Dissolved Aluminum: Titration "B" x 0.36 = opg dissolved aluminum.

To insure consistent quality etching and prevent caustic regeneration when caustic sodium aluminate converts to aluminum hydrate sludge and liberates caustic, maintain correct concentrations of ***ALUMA ETCH 185*** and free caustic. The rate of aluminum removal is proportional to the concentration of dissolved aluminum and free or available etch or caustic. Therefore, the caustic should be raised as the sodium aluminate concentration rises.

Metal Removal

Metal removal can be checked with aluminum panels and a micrometer. To maintain 0.8 to I mil of metal removal in 8 to 10 minutes at 130 to 140° F, (54-60° C) use the table on the following page for recommended concentrations.

Dissolved Aluminum	Concentration of Etchant
O -10 opg (0-75 g/l)	3 to 4 opg (22-30 g/l)
10-16 opg (75-120 g/l)	4 to 6 opg (30-45 g/l)
16-18 opg (120-135 g/l)	5-7pg (37-525)
18 -20 opg (135-150 g/l)	6-8 opg (45-60 g/l)
20-22 opg (150-165 g/l)	7-9 opg (52-67 g/l)
22-23 opg (165-172 g/l)	8-10 opg (60-75 g/l)
23 to 24 opg (165-180 g/l)	10-12 opg (75-90 g/l)

- As dissolved aluminum reaches 100 grams/liter, it is not advisable to allow the free etch to drop below 6 opg.
- Do not allow etch to drop below 4 opg.

TEMPERATURE

Temperature is important, as it has a major effect on the finish of the material. Combined with bath concentration, the temperature will alter such factors as metal removal, etch rate and appearance of the aluminum. Lower operating temperatures will require higher etch concentrations, while higher temperatures generally require less product.

EQUIPMENT

Mild steel or PVC tanks are satisfactory, as are steel heating and cooling coils. (Dissolving aluminum with caustic soda is an exothermic reaction therefore cooling may be required to maintain bath temperature within proper operating range.)

Solutions operate at elevated temperatures and generate steam vapors as well as a small amount of alkaline spray. Hence, a PVC, polypropylene, polyethylene or fiberglass ventilation is recommended.

STORAGE/HANDLING

ALUMA ETCH 185 is stable and has excellent shelf life. Store in a dry area in tightly closed containers.

The product is highly alkaline and can cause severe burns. Wear proper protective clothing, rubber boots, apron, gloves and face shield when handling the material. In case of contact, flush with large amount of water. If swallowed get medical attention immediately. ***Refer to the Material Safety Data Sheet for more complete information before using this product.***

WARRANTY

The information presented herein, while not guaranteed, is to the best of our knowledge, true and accurate. No warranty or guarantee expressed or implied is made regarding the performance of any products, since the manner of use is beyond our control. No suggestion for product use nor anything contained herein, shall be construed as a recommendation for its use in infringement of any existing patent, and we assume no responsibility or liability for operations which do infringe any such patents. The above includes confidential and proprietary information of ***A Brite*** and is furnished to you for your use solely on products or processes supplied to you by us.

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